

WHAT IS CLAIMED IS:

1 1. A coated composite cylinder produced by a process
2 comprising:
3 drawing a metal casing on an external surface of a composite cylinder
4 while the composite cylinder has composite material in an uncured state, thereby
5 creating an adhesive bond between the metal casing and the composite material
6 without the addition of a separate adhesive material.

1 2. The coated composite cylinder of claim 1, wherein the
2 drawing of the metal casing includes working the cylinder to dimensional accuracy.

1 3. The coated composite cylinder of claim 1, wherein the
2 composite cylinder comprises a carbon fiber composite roll.

1 4. The coated composite cylinder of claim 1, wherein the metal
2 casing includes a surface formed with a surface pattern or embossment to facilitate
3 modifying by a metal treating process and/or plating with a coating layer.

1 5. The coated composite cylinder of claim 1, wherein the metal
2 casing includes a surface modified by a metal treating process and/or plated with a
3 coating layer.

1 6. The coated composite cylinder of claim 5, wherein the metal
2 casing surface is modified by a metal treating process, the metal treating process
3 comprising rolling the surface for a threaded pattern, helical pattern, or a pattern of
4 flutes.

1 7. The coated composite cylinder of claim 5, wherein the metal
2 casing surface is plated with a coating layer, the plating including an electrolytic
3 coating.

1 8. The coated composite cylinder of claim 5, wherein the metal
2 casing surface is plated with a coating layer, the plating including a hard chromium
3 plating or nickel plating.

1 9. A machine for making paper including a coated composite
2 cylinder having a wear resistant surface for increasing the service life of the
3 cylinder, the coated composite cylinder being produced by a process comprising:
4 drawing a metal casing on an external surface of a composite cylinder
5 while the composite cylinder has composite material in an uncured state, thereby
6 creating an adhesive bond between the metal casing and the composite material
7 without the addition of a separate adhesive material.

1 10. The coated composite cylinder of claim 9, wherein the
2 drawing of the metal casing includes working the cylinder to dimensional accuracy.

1 11. The coated composite cylinder of claim 9, wherein the
2 composite cylinder comprises a carbon fiber composite roll.

1 12. The coated composite cylinder of claim 9, wherein the metal
2 casing includes a surface formed with a surface pattern or embossment to facilitate
3 modifying by a metal treating process and/or plating with a coating layer.

1 13. The coated composite cylinder of claim 9, wherein the metal
2 casing includes a surface modified by a metal treating process and/or plated with a
3 coating layer.

1 14. The coated composite cylinder of claim 13, wherein the metal
2 casing surface is modified by a metal treating process, the metal treating process
3 comprising rolling the surface for a threaded pattern, helical pattern, or a pattern of
4 flutes.

1 15. The coated composite cylinder of claim 13, wherein the metal
2 casing surface is plated with a coating layer, the plating including an electrolytic
3 coating.

1 16. The coated composite cylinder of claim 13, wherein the metal
2 casing surface is plated with a coating layer, the plating including a hard chromium
3 plating or nickel plating.